



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/672,511      | 09/28/2000  | Cheng-Chieh Lee      | 4                   | 2118             |

22046 7590 02/26/2007  
DOCKET ADMINISTRATOR  
LUCENT TECHNOLOGIES INC.  
ROOM 2F-190  
600 MOUNTAIN AVENUE  
MURRAY HILL, NJ 07974-0636

|          |
|----------|
| EXAMINER |
|----------|

ARMSTRONG, ANGELA A

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2626

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 02/26/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

09/672,511

Applicant(s)

LEE

Examiner

Angela A. Armstrong

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,18,19,24,25,30,31,40,41,50,51,56,57,62 and 63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,10-12,14-17,20-23,26-29,32-37,42-44,46-49,52-55,58-61 and 64 is/are rejected.
- 7) ☒ Claim(s) 6,7,13,38,39 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species of the claimed invention: (1) encoders, decoders, and encoding methods implementing first and second quantization each comprising a pulse code modulation scheme; (2) encoders, decoders, and encoding methods implementing first and second quantization each comprising an adaptive differential pulse code modulation scheme; and (3) encoders, decoders, and encoding methods implementing first and second quantization each comprising a code excited linear predictive coding scheme.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 5, 16, 21, 27, 37, 48, 53, and 59 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after

Art Unit: 2626

the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

***Response to Amendment***

2. Applicant's election with traverse of species 1 in the reply filed on August 27, 2004 is acknowledged. The traversal is on the ground(s) that only the specific claims (the claim from which the different species depended from) that are generic to the different species was indicated in the Office Action as being generic, and not all the other pending claims. This is not found persuasive because applicant has not provided any argument as to why or how the disclosure does not specifically contain the three separate and distinct species identified in the election requirement.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 10-12, 14-17, 20, -23, 26-29, 32-37, 42-44, 46-49, 52-55, 58-61, and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by Jafarkhani et al (US Patent No. 6,823,018).
4. Jafarkhani discloses a multiple description coding communication system.
5. Regarding claim 1, Jafarkhani discloses a multi-descriptive encoder for generating a plurality of multi-descriptive bit streams from a sing source signal (Figures 4, 13), the encoder comprising: a source signal input port for supplying the source signal (col. 4, lines 1-4); a first coder applied to the source signal input port, the first coder for generating a first multi-descriptive bit stream from the source signal, the first coder employing a first coding algorithm which includes a first quantization process in which a first data value based on the source signal is coded with use of a corresponding first quantized data value (col. 5, line 15 to col. 6, line 14; col. 7, line 48 to col. 8, line 60), thereby resulting in a corresponding first quantization error representative of a difference between said first data value and said first quantized data value; and a second coder applied to the source signal input port, the second coder for generating a second multi-descriptive bit stream from the source signal, the second coder employing a second coding algorithm which includes a second quantization process in which a second data value,

Art Unit: 2626

based on the source signal and corresponding to said first data value, is coded with use of a corresponding second quantized data value (col. 5, line 15 to col. 6, line 14; col. 7, line 48 to col. 8, line 60), thereby resulting in a corresponding second quantization error representative of a difference between said second data value and said second quantized data value, wherein said second quantized data value as produced by said second quantization process is based at least in part on said first quantization error resulting from said first quantization process.

Regarding claim 2, Jafarkhani discloses the first coding algorithm and said second coding algorithm differ in at most the corresponding quantization processes included therein (col. 4, line 60 to col. 6, line 14)

Regarding claim 3, Jafarkhani discloses the source signal is a speech signal (col. 4, line 31).

Regarding claim 4, Jafarkhani discloses second quantized data value as produced by said second quantization process is determined so that said second quantization error resulting from said second quantization process is such that if combined with said first quantization error resulting from said first quantization process to produce a net quantization error, said net quantization error will be less than said first quantization error (col. 5, line 51 to col. 6, line 14; col. 7, line 48 to col. 8, line 60).

Regarding claim 5, Jafarkhani discloses first quantization process and said second quantization process each select said corresponding quantized data values from a single predetermined set of quantization values (col. 4, line 66 to col. 5, line 4).

Regarding claims 10-12, Jafarkhani discloses modifying said first and second quantization processes in a periodic fashion (col. 7, line 48 to col. 8, line 60), such that after a

Art Unit: 2626

first predetermined amount of time (the first redundancy processing/calculation), (i) said first quantization process produces a subsequent first quantized data value based at least in part on a corresponding subsequent second quantization error resulting from said second quantization process, and (ii) said second quantization process produces a subsequent second quantized data value not based on a corresponding subsequent first quantization error resulting from said first quantization process; and after a second predetermined amount of time (the next redundancy processing/calculation), (iii) said second quantization process produces a further subsequent second quantized data value based at least in part on a corresponding further subsequent first quantization error resulting from said first quantization process, and (iv) said first quantization process produces a further subsequent first quantized data value not based on a corresponding further subsequent second quantization error resulting from said second quantization process (second or subsequent first and second quantization processes are inherent in the coding algorithm since the system is using the redundancy algorithm to improve processing and obtain the most optimum data bitstreams).

6. Regarding claims 21 and 23, Jafarkhani discloses a multiple description coding communication system and provides the appropriate decoding system in the communication system for reconstructing the transmitted information (Figure 5 and 6) such that the system provides for decoding the plurality of multi-descriptive bit streams and comprises a plurality of decoders corresponding to the plurality of multi-descriptive bit streams to be decoded, each of said decoders generating a corresponding decoded bit stream (col. 8, line 65 to col. 11, line 30); and a mixer for combining said decoded bit streams to produce the reconstructed source signal (col. 4, lines 48-57), and wherein the plurality of multi-descriptive bit streams have been

Art Unit: 2626

generated by a multi-descriptive encoder comprises a source signal input port for supplying the source signal (col. 4, lines 1-4); a first coder applied to the source signal input port, the first coder for generating a first multi-descriptive bit stream from the source signal, the first coder employing a first coding algorithm which includes a first quantization process in which a first data value based on the source signal is coded with use of a corresponding first quantized data value (col. 5, line 15 to col. 6, line 14; col. 7, line 48 to col. 8, line 60), thereby resulting in a corresponding first quantization error representative of a difference between said first data value and said first quantized data value; and a second coder applied to the source signal input port, the second coder for generating a second multi-descriptive bit stream from the source signal, the second coder employing a second coding algorithm which includes a second quantization process in which a second data value, based on the source signal and corresponding to said first data value, is coded with use of a corresponding second quantized data value (col. 5, line 15 to col. 6, line 14; col. 7, line 48 to col. 8, line 60), thereby resulting in a corresponding second quantization error representative of a difference between said second data value and said second quantized data value, wherein said second quantized data value as produced by said second quantization process is based at least in part on said first quantization error resulting from said first quantization process.

Regarding claim 22, Jafarkhani discloses the source signal is a speech signal (col. 4, line 31).

Regarding claim 26, Jafarkhani discloses each of said plurality of decoders has a corresponding internal state thereof, and wherein said internal state corresponding to a first one of said plurality of decoders is updated based on said internal state corresponding to another one



Art Unit: 2626

of said plurality of decoders when said multi-descriptive bit stream corresponding to said first one of said plurality of decoders experiences a frame erasure (col. 5, lines 33-35 and 55-60 – as Jafarkhani describes the decoder determines which channels are lost (41) and performs reconstruction using available or most useful of the received data; C' and D' or C' only or D' only).

7. Regarding claims 14-17, 20, 33-37, 42-44, 46-49, and 52, the claims are similar in scope and/or content to the encoder of claims 1-5 and 10-12, and therefore are rejected under similar rationale.

8. Regarding claims 27-29, 32, 53-55, 58-61 and 64, the claims are similar in scope and/or content to the decoder of claims 21-23 and 26, and therefore are rejected under similar rationale.

#### ***Allowable Subject Matter***

9. Claims 6-7, 13, 38-39, and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

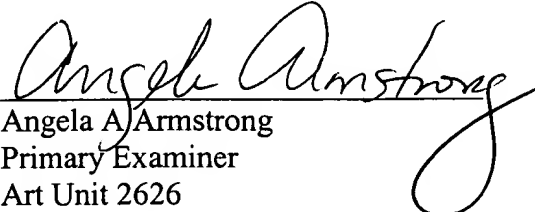
John et al (US Patent No. 6,665,646) discloses a predictive balanced multiple description coder for data compression.

Art Unit: 2626

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Angela A. Armstrong  
Primary Examiner  
Art Unit 2626

AAA  
February 18, 2007